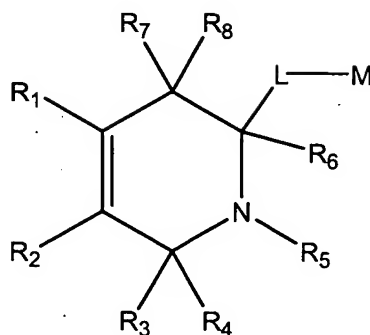


What is claimed is:

1. A compound comprising the formula:



wherein

R<sub>1</sub> and R<sub>2</sub> are taken together to form a substituted or unsubstituted aromatic ring;

R<sub>3</sub> and R<sub>4</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group or where R<sub>3</sub> and R<sub>4</sub> are taken together to form a ring;

R<sub>5</sub> is selected from a group of substituents that comprise a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>6</sub> is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>7</sub> and R<sub>8</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

2. A compound according to claim 1, wherein  $R_1$  and  $R_2$  are selected such that the substituted or unsubstituted aromatic ring formed when  $R_1$  and  $R_2$  are taken together is a substituted or unsubstituted aryl ring.

3. A compound according to claim 1, wherein  $R_1$  and  $R_2$  are selected such that an aryl ring is formed that is substituted and comprises one or more substituents that together form a ring fused to the aryl ring.

4. A compound according to claim 1, wherein  $R_1$  and  $R_2$  are selected such that an aryl ring is formed that is a substituted or unsubstituted phenyl ring.

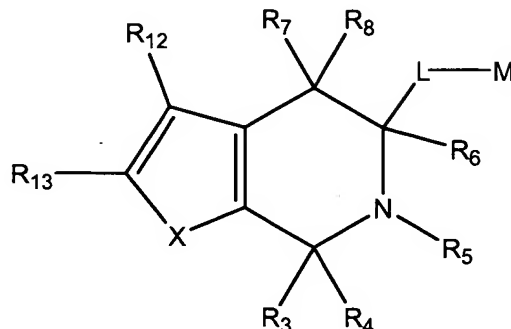
5. A compound according to claim 4, wherein  $R_1$  and  $R_2$  are selected such that the phenyl ring is substituted and comprises one or more substituents that together form a ring fused to the phenyl ring.

6. A compound according to claim 1, wherein  $R_1$  and  $R_2$  are selected such that an aryl ring is formed that is a substituted or unsubstituted heteroaryl ring.

7. A compound according to claim 1, wherein  $R_1$  and  $R_2$  are selected such that a substituted or unsubstituted heteroaryl ring is formed that is selected from the group of substituted or unsubstituted heteroaryl rings consisting of furan, thiofuran, pyrrole, pyrazole, imidazole, triazole, isoxazole, oxazole, thiazole, isothiazole, pyridine, pyridazine, pyrimidine, pyrazine, benzofuran, benzothiofuran, indole, quinoline, isoquinoline, cinnoline, naphthyridine, and pyridopyridine.

8. A compound according to claim 1, wherein  $R_1$  and  $R_2$  are selected such that a substituted or unsubstituted fused heteroaryl ring is formed

9. A compound comprising the formula



wherein

$R_3$  and  $R_4$  are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group or where  $R_3$  and  $R_4$  are taken together to form a ring;

$R_5$  is selected from a group of substituents that comprise a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

$R_6$  is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

$R_7$  and  $R_8$  are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or  $R_7$  and  $R_8$  are taken together to form a substituent comprising a moiety

attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring;

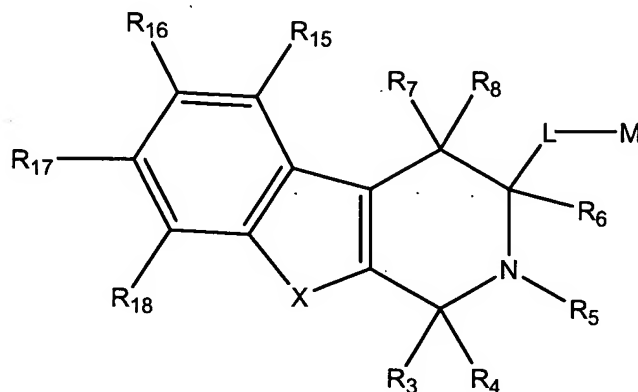
$R_{12}$  and  $R_{13}$  are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or  $R_7$  and  $R_8$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

X is selected from the group consisting of O, S, and  $NR_{14}$ , where  $R_{14}$  comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, hydroxyl, alkyl, aromatic ring, alkoxy, aryloxy, a carbonyl group, a thiocarbonyl group, and a sulfonyl group;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

10. A compound comprising the formula:



wherein

$R_3$  and  $R_4$  are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group or where  $R_3$  and  $R_4$  are taken together to form a ring;

R<sub>5</sub> is selected from a group of substituents that comprise a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>6</sub> is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>7</sub> and R<sub>8</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring;

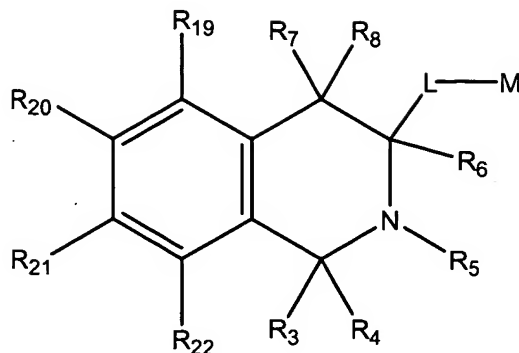
R<sub>15</sub>, R<sub>16</sub>, R<sub>17</sub> and R<sub>18</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, except where R<sub>15</sub> and R<sub>16</sub>, R<sub>16</sub> and R<sub>17</sub>, and/or R<sub>17</sub> and R<sub>18</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

X is selected from the group consisting of O, S, and NR<sub>14</sub>, where R<sub>14</sub> comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, hydroxyl, alkyl, aromatic ring, alkoxy, aryloxy, a carbonyl group, a thiocarbonyl group, and a sulfonyl group;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

11. A compound comprising the formula:



wherein

R<sub>3</sub> and R<sub>4</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group or where R<sub>3</sub> and R<sub>4</sub> are taken together to form a ring;

R<sub>5</sub> is selected from a group of substituents that comprise a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>6</sub> is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>7</sub> and R<sub>8</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring;

R<sub>19</sub>, R<sub>20</sub>, R<sub>21</sub> and R<sub>22</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen,

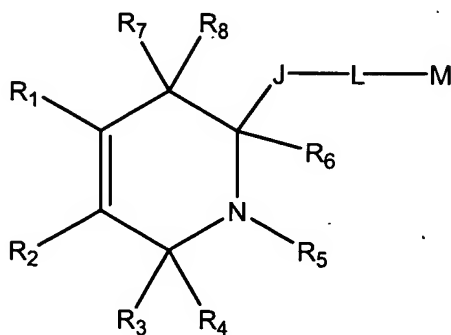
alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, except where  $R_{19}$  and  $R_{20}$ ,  $R_{20}$  and  $R_{21}$ , and/or  $R_{21}$  and  $R_{22}$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

X is selected from the group consisting of O, S, and  $NR_{14}$ , where  $R_{14}$  comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, hydroxyl, alkyl, aromatic ring, alkoxy, aryloxy, a carbonyl group, a thiocarbonyl group, and a sulfonyl group;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

12. A compound comprising the formula:



wherein

$R_1$  and  $R_2$  are taken together to form a substituted or unsubstituted aromatic ring;

$R_3$  and  $R_4$  are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group or where  $R_3$  and  $R_4$  are taken together to form a ring;

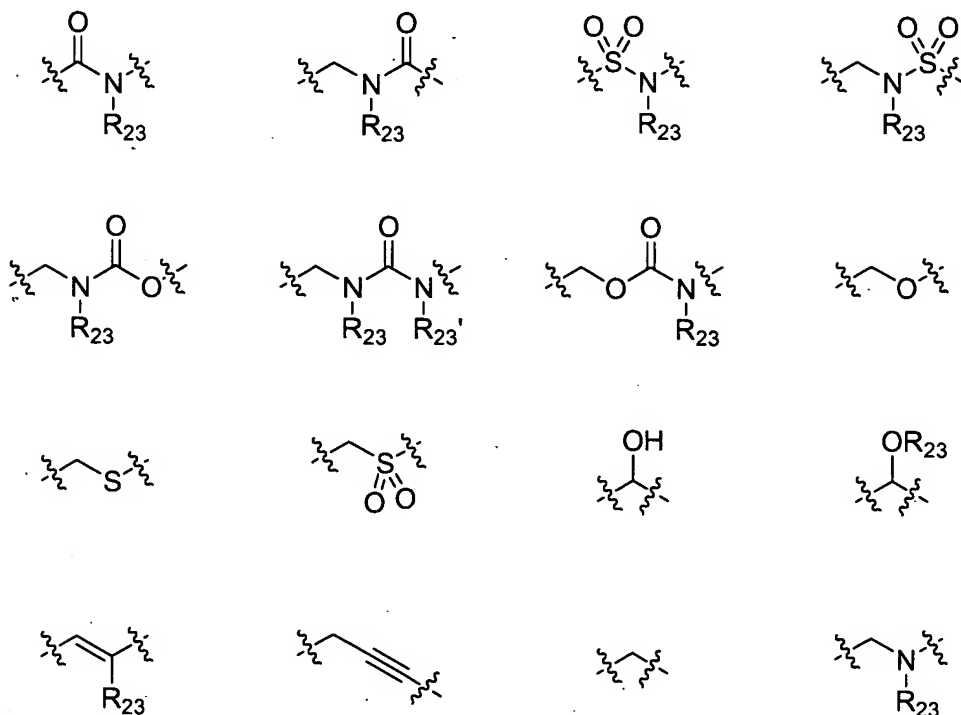
$R_5$  is selected from a group of substituents that comprise a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>6</sub> is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>7</sub> and R<sub>8</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring;

M is a substituent capable of complexing with a protein metal ion;

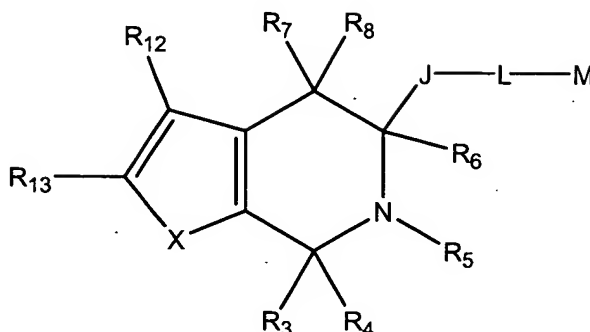
J is selected from the group consisting of



where R<sub>23</sub> is a C<sub>1-10</sub> alkyl; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the J substituent.

13. A compound comprising the formula



wherein

$R_3$  and  $R_4$  are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group or where  $R_3$  and  $R_4$  are taken together to form a ring;

$R_5$  is selected from a group of substituents that comprise a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

$R_6$  is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

$R_7$  and  $R_8$  are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or  $R_7$  and  $R_8$  are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring;

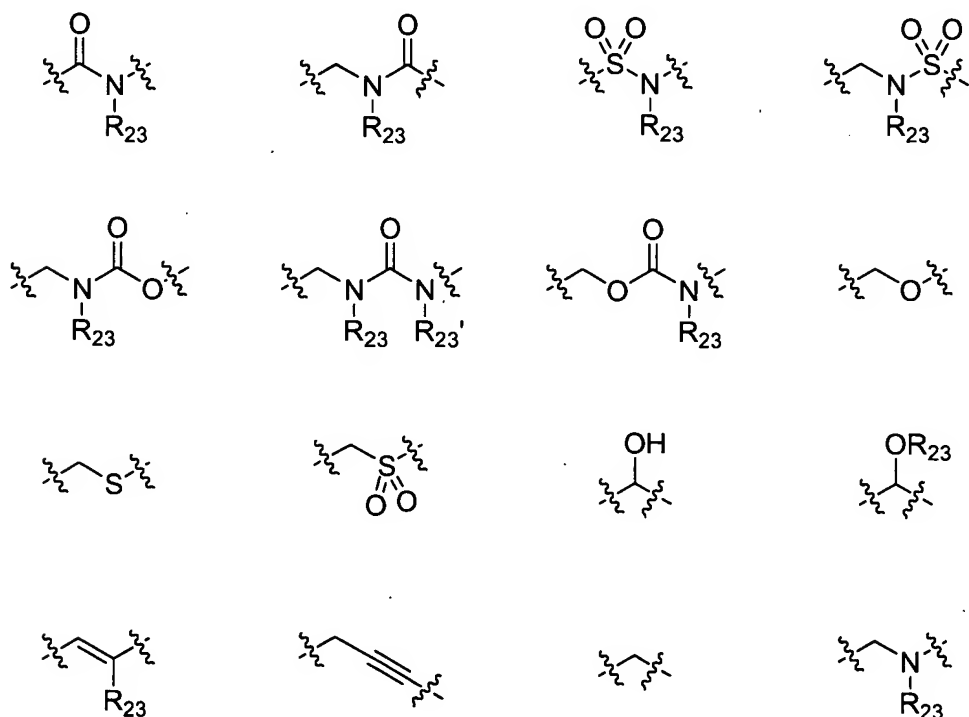
$R_{12}$  and  $R_{13}$  are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl,

aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or  $R_7$  and  $R_8$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

X is selected from the group consisting of O, S, and  $NR_{14}$ , where  $R_{14}$  comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, hydroxyl, alkyl, aromatic ring, alkoxy, aryloxy, a carbonyl group, a thiocarbonyl group, and a sulfonyl group;

M is a substituent capable of complexing with a protein metal ion;

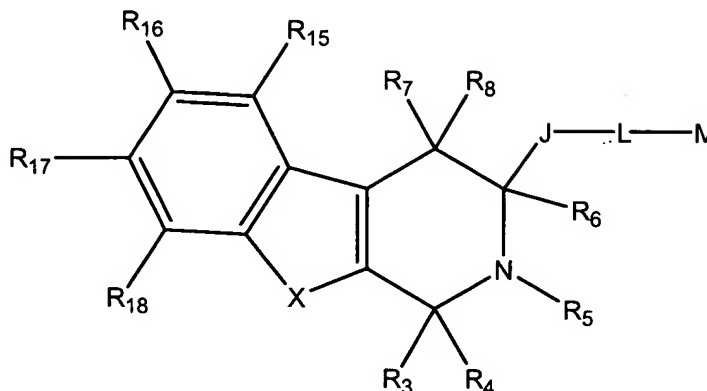
J is selected from the group consisting of



where  $R_{23}$  is a  $C_{1-10}$  alkyl; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the J substituent.

14. A compound comprising the formula:



wherein

R<sub>3</sub> and R<sub>4</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group or where R<sub>3</sub> and R<sub>4</sub> are taken together to form a ring;

R<sub>5</sub> is selected from a group of substituents that comprise a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>6</sub> is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>7</sub> and R<sub>8</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring;

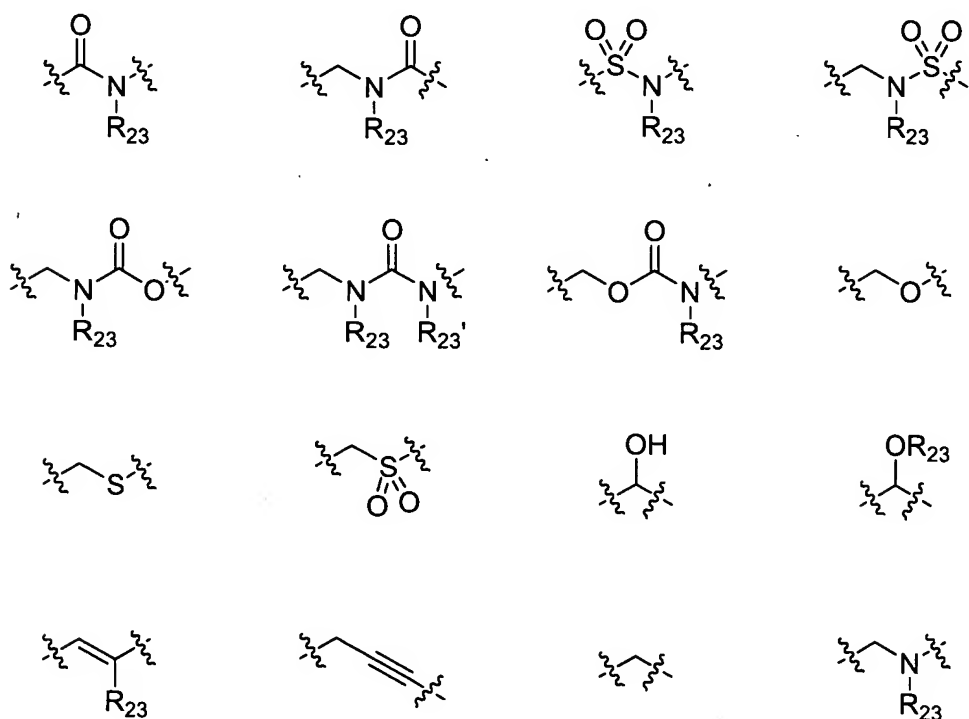
R<sub>15</sub>, R<sub>16</sub>, R<sub>17</sub> and R<sub>18</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen,

alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, except where  $R_{15}$  and  $R_{16}$ ,  $R_{16}$  and  $R_{17}$ , and/or  $R_{17}$  and  $R_{18}$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

X is selected from the group consisting of O, S, and  $NR_{14}$ , where  $R_{14}$  comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, hydroxyl, alkyl, aromatic ring, alkoxy, aryloxy, a carbonyl group, a thiocarbonyl group, and a sulfonyl group;

M is a substituent capable of complexing with a protein metal ion;

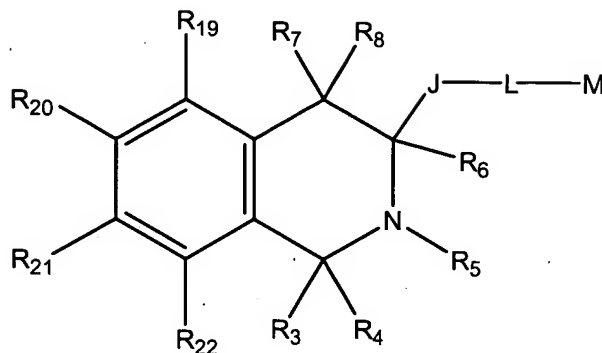
J is selected from the group consisting of



where  $R_{23}$  is a  $C_{1-10}$  alkyl; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the J substituent.

15. A compound comprising the formula:



wherein

R<sub>3</sub> and R<sub>4</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, and a thiocarbonyl group or where R<sub>3</sub> and R<sub>4</sub> are taken together to form a ring;

R<sub>5</sub> is selected from a group of substituents that comprise a moiety attached to the ring nitrogen selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>6</sub> is selected from a group of substituents that comprise a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, cyano, a carbonyl group, a thiocarbonyl group and a sulfonyl group;

R<sub>7</sub> and R<sub>8</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, or R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituent comprising a moiety attached to the ring carbon selected from the group consisting of a carbonyl, thiocarbonyl, imine, alkene and ring;

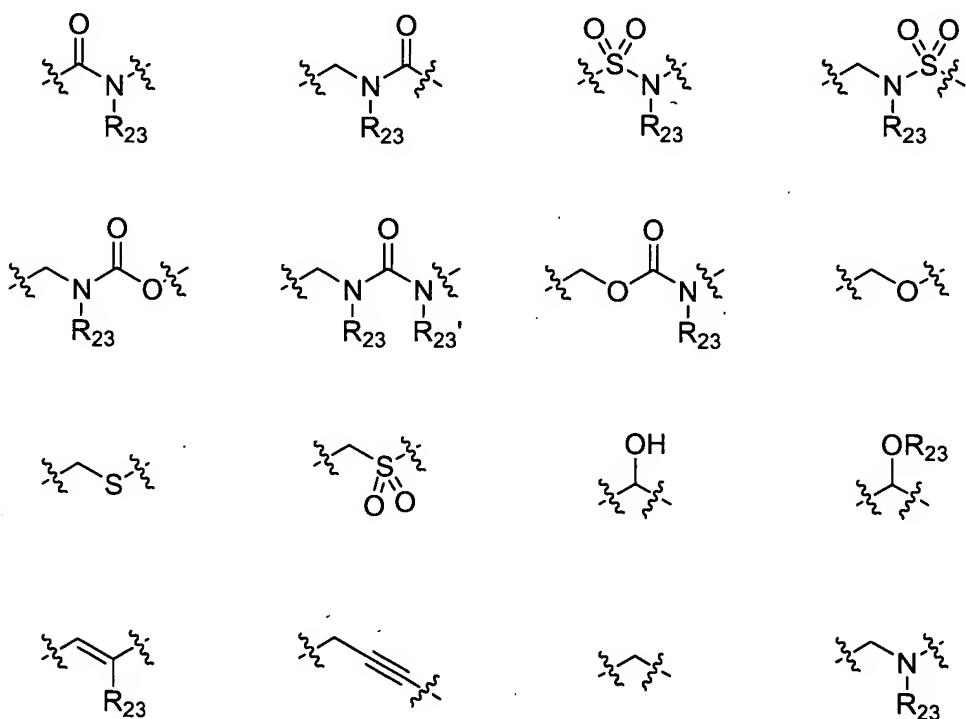
R<sub>19</sub>, R<sub>20</sub>, R<sub>21</sub> and R<sub>22</sub> are each independently selected from a group of substituents comprising a moiety attached to the ring carbon selected from the group consisting of hydrogen,

alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, nitro, cyano, halogen, hydroxyl, thiol, amino, a carbonyl group, and a thiocarbonyl group, except where  $R_{19}$  and  $R_{20}$ ,  $R_{20}$  and  $R_{21}$ , and/or  $R_{21}$  and  $R_{22}$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

X is selected from the group consisting of O, S, and  $NR_{14}$ , where  $R_{14}$  comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, hydroxyl, alkyl, aromatic ring, alkoxy, aryloxy, a carbonyl group, a thiocarbonyl group, and a sulfonyl group;

M is a substituent capable of complexing with a protein metal ion;

J is selected from the group consisting of



where  $R_{23}$  is a  $C_{1-10}$  alkyl; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the J substituent.

16. A compound according to claim 1, wherein at least one of  $R_3$  and  $R_4$  is selected from a group of substituents where the moiety attached to the ring carbon is a  $C_1$ -  $C_{10}$  alkyl, aminoalkyl, or oxaalkyl.

17. A compound according to claim 1, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is selected from a group of substituents where the moiety attached to the ring carbon is a branched C<sub>1</sub>- C<sub>10</sub> alkyl, aminoalkyl, or oxaalkyl.
18. A compound according to claim 17, wherein the C<sub>1</sub>- C<sub>10</sub> alkyl, aminoalkyl, or oxaalkyl further comprises a substituent selected from the group consisting of an alkyl, aromatic ring, cyano group, halogen, and carbonyl group.
19. A compound according to claim 17, wherein the C<sub>1</sub>- C<sub>10</sub> alkyl, aminoalkyl, or oxaalkyl further comprises a substituted or unsubstituted aromatic ring.
20. A compound according to claim 1, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is selected from a group of substituents where the moiety attached to the ring carbon is an aromatic ring.
21. A compound according to claim 1, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted phenyl ring.
22. A compound according to claim 1, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted heteroaryl.
23. A compound according to claim 1, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is selected from a group of substituents where the moiety attached to the ring carbon is a substituted or unsubstituted heteroaryl selected from the group consisting of furan, thiofuran, pyrrole, pyrazole, isoimidazole, triazole, isoxazole, oxazole, thiazole, isothiazole, oxadiazole, oxatriazole, pyridine, pyridazine, pyrimidine, pyrazine, triazine, benzofuran, isobenzofuran, benzothiofuran, isobenzothiofuran, indole, isobenzazole, quinoline, isoquinoline, cinnoline, quinazoline, naphthyridine, and pyridopyridine.

24. A compound according to claim 1, wherein R<sub>3</sub> and R<sub>4</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.
25. A compound according to claim 1, wherein R<sub>3</sub> and R<sub>4</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 member alicyclic ring.
26. A compound according to claim 1, wherein at least one of R<sub>3</sub> and R<sub>4</sub> is selected from a group of substituents where the moiety attached to the ring carbon is selected from the group consisting of an aldehyde, amide, ester, ketone, and carboxylic acid.
27. A compound according to claim 1, wherein R<sub>5</sub> and R<sub>6</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.
28. A compound according to claim 1, wherein R<sub>5</sub> and R<sub>6</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 alicyclic ring.
29. A compound according to claim 1, wherein R<sub>6</sub> and R<sub>7</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.
30. A compound according to claim 1, wherein R<sub>6</sub> and R<sub>7</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 alicyclic ring.
31. A compound according to claim 1, wherein R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.
32. A compound according to claim 1, wherein R<sub>7</sub> and R<sub>8</sub> are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 alicyclic ring.
33. A compound according to claim 1, wherein R<sub>7</sub> and R<sub>8</sub> are taken together to form an imine having a substituent R<sub>9</sub> on the imine nitrogen selected from the group consisting of

hydrogen, alkyl, aminoalkyl, oxaalkyl, aromatic ring, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, and sulfonylamino.

34. A compound according to claim 1, wherein  $R_7$  and  $R_8$  are taken together to form an alkene substituent having the formula  $=CR_{10}R_{11}$  where  $R_{10}$  and  $R_{11}$  are each independently selected from a group of substituents consisting of hydrogen, halogen, alkyl, aryl, alkoxy, aryloxy, alkylamino, arylamino, alkylthio, arylthio, acylamino, sulfonylamino, cyano, nitro, a carbonyl group, thiocarbonyl, and sulfonyl or where  $R_{10}$  and  $R_{11}$  are taken together to form an alkene.

35. A compound according to claim 1, wherein  $R_7$  and  $R_8$  are taken together to form an alkene substituent having the formula  $=CR_{10}R_{11}$  where  $R_{10}$  and  $R_{11}$  are together together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring.

36. A compound according to claim 35 wherein  $R_{10}$  and  $R_{11}$  are taken together to form a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 member alicyclic ring.

37. A compound according to claim 1, wherein M is selected from the group consisting of:

